Abstract

Electrical circuit for driving a load

The electrical circuit for driving a load comprises a transistor (12;14;22) having a load current flowing therethrough, a measurement device (30,32) for determining the voltage drop across this transistor (12;14;22), a device (42) for impressing a measuring current into the transistor (12;14;22), and a device for determining the resistance value of the transistor (12;14;22) in its ON state, this resistance value being between a known maximum value (R_{XMAX}) and a known minimum value (R_{XMIN}). The device for determining the resistance value is provided with a measuring bridge (36) having the transistor (12;14;22) and a known reference resistor (R_R) arranged in its first bridge arm (38) and having three respectively known resistors (R_1,R_2,R_3) arranged in its second bridge arm (40). The first bridge arm (38) comprises a resistor connecting point (K_1) between the reference resistor (R_R) and the transistor (12;14;22), and the second bridge leg (40) comprises a first resistor connecting point (K_2) between the first resistor (R_1) connected to the transistor (12;14;22), and the second resistor (R_2), as well as a second resistor connecting point (K_3) between the second resistor (R_2) and the third resistor (R_3) connected to the reference resistor. The values of the reference resistor (R_R) of first bridge arm (38) and of the three resistors (R_1,R_2,R_3) of the second bridge arm (40) are selected in such a manner that (i) the potential of the resistor connecting point (K_1) of the first bridge leg (38) is equal to the potential of the first resistor connecting point (K_2) of the second bridge leg (40) if the transistor (12;14;22) is at its minimum resistance value (R_{XMIN}), and (ii) the potential of the resistor connecting point (K_1) of the first bridge leg (38) is equal to the potential of the second resistor connecting point (K_3) of the second bridge leg (40) if the transistor (12;14;22) is at its maximum resistance value (R_{XMAX}).

(Fig. 2)